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CARDIOPULSE

COVID-19 and Katrina: recalcitrant racial disparities

In 2005, Hurricane Katrina inflicted a devastating blow on New Orleans, Louisiana, USA. This natural disaster decimated neighbourhoods and led to the deaths of >1500 residents, disproportionately impacting black Americans. Exacting an unprecedented toll on life and property, Katrina exposed the deep socioeconomic divide impacting Blacks and laid bare the vulnerability and fragility in lower socioeconomic communities. Change did emanate from Katrina, but the root causes that fuelled the disparate outcomes remained. Those social determinants of health—poverty, housing density, high crime neighbourhoods, less than ideal schools, and poor access to healthy foods—left Louisiana ill equipped to deal with subsequent crises, including the current COVID-19 pandemic.

Now, the COVID-19 pandemic is shedding an even brighter light on the recalcitrant healthcare disparities in the USA, where infection rates in predominantly Black counties are three-fold that of predominantly White counties.[1] Mortality rates are disheartening, particularly in the Southern states. In Louisiana, Blacks represent about a third of the population but account for half of the infections and two-thirds of COVID-related deaths.[1] Across the USA, the increased risk of death for Blacks with COVID-19 varies from two-fold to six-fold higher than Whites (*Figure 1*). Once again, a crisis has exposed deep racial disparities. This exquisitely high burden of disease is halting and requires further explanation.

The higher risk of death is not yet fully resolved and must be adjusted for known comorbidities; indeed some of the mortality difference is attributable to well-described cardio-metabolic risk factors in Blacks.[2] Relative to non-Hispanic Whites, Blacks have a higher prevalence of hypertension, obesity, diabetes, and cardiovascular disease, all of which are associated with increased COVID-19 mortality.[2,3] The Southern states in the USA represent the epicentre for this increased burden of cardiovascular risk, and the COVID-19-related mortality of black Americans has been disproportionately high in these states (*Figure 2*).

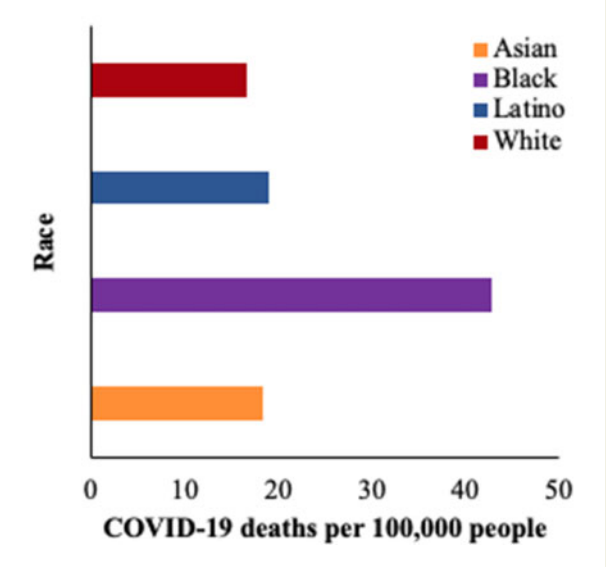

Figure 1 COVID-19 deaths per 100 000 people of each group by race and ethnicity in the USA, reported through 11 May 2020. Includes data from Washington, DC, and the 39 states of Alabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, New Hampshire, New Jersey, New York, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Vermont, Virginia, Washington, and Wisconsin. Data from the American Public Media Research Lab.[13]

However, the race-based differences in comorbidities alone do not account for the increased mortality risk in Blacks. The totality of the risk of death is inextricably linked with the social determinants of health. Even the baseline differences in cardio-metabolic risk are partly socioeconomic, driven by poverty, neighbourhood deprivation, poor nutrition, suboptimal health literacy, and unequal access to preventive healthcare[2] (*Figures 3* and *4*). These relevant comorbidities are ostensibly preventable and require not only evidence-based medical therapy and lifestyle change, but also higher level interventions that address the social determinants of health.

The increased risk of viral transmission among black Americans is vexing and is likely to be driven by social and economic factors rather than biology. Some COVID-19 diagnosis schemes such as drive-through testing do not reach those in crowded inner cities who lack access to a car. Moreover, testing in any iteration has been consistently less available in lower socioeconomic communities. Living conditions influence the feasibility of public health measures such as social distancing and quarantine, and viral transmission is enhanced in crowded neighbourhoods, multigenerational households, and small, shared living spaces.[2] Black Americans are more likely to have low-wage jobs, defined as essential, that cannot be performed remotely. Substandard working conditions—such as those in factories where minorities are over-represented and work shoulder to shoulder—are not conducive to infection prevention. All of the effective means of prevention—working from home, social distancing, and vigorous testing—have not been feasible for many Blacks.

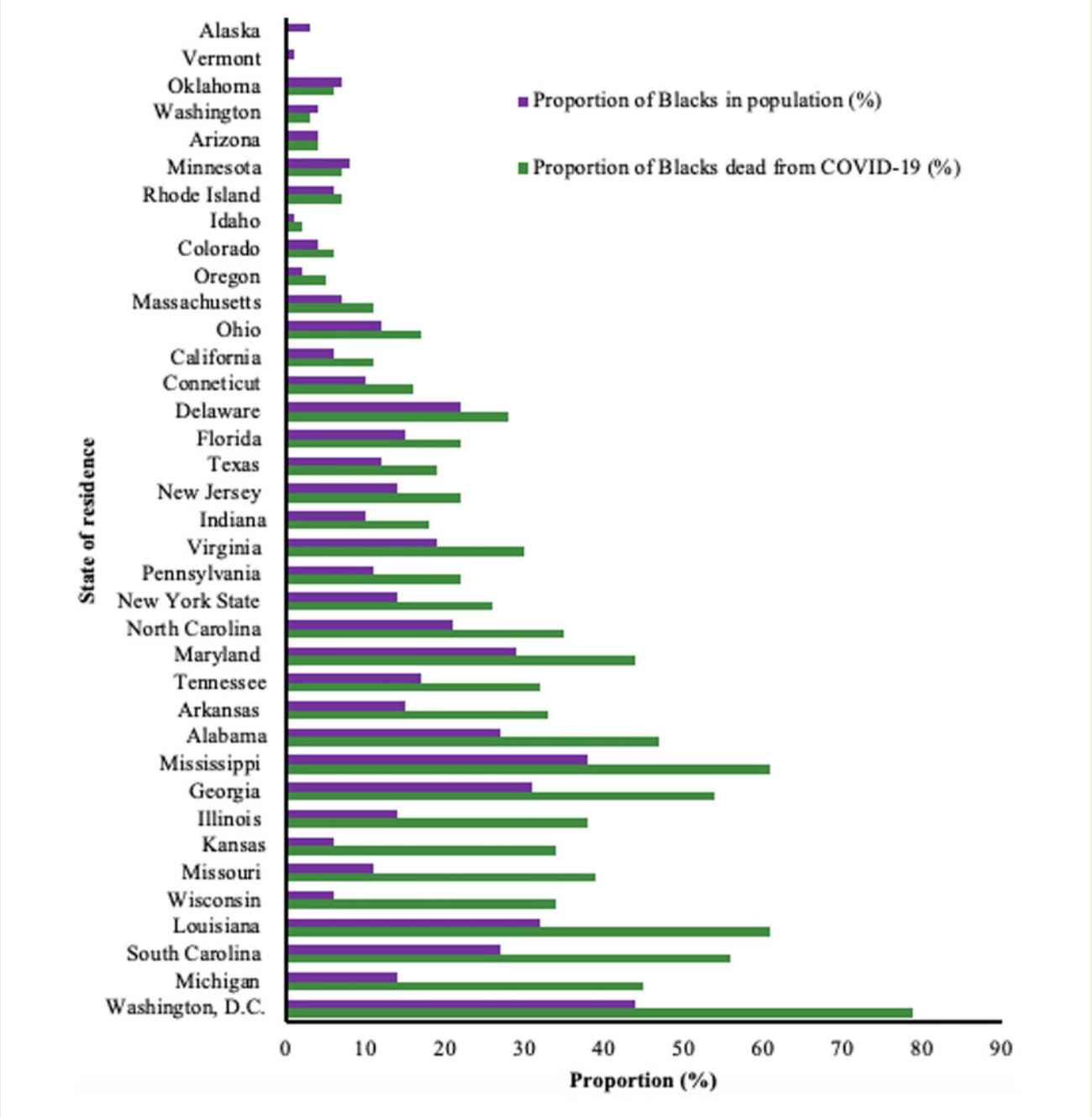

Figure 2 Percentage of COVID-19 deaths and population of black Americans, through to 27 April 2020 in the USA. Includes data from Washington, DC and 36 states. Sorted from most under-represented to most over-represented. Data from the American Public Media Research Lab.[14]

The presumption that better access to care could end healthcare disparities is another vulnerability laid bare by the COVID-19 crisis. The link between employment and health insurance works for healthy employees but fails during a period when lockdown measures translate to job loss for those who subsequently require healthcare. The underinsured or uninsured—disproportionately Blacks—have even greater challenges as available primary care is nearly non-existent.[4] Decades of disparate care, possibly related to a history of institutional bias, have led to a mistrust of conventional healthcare systems. The resultant hesitancy to seek care leads to late and pre-morbid presentation to care providers and hospitals. To further aggravate the disparities, hospitals providing care for at-risk populations are typically under-resourced, have lower quality metrics, and carry a disproportionate burden as safety net hospitals.[5] This cavernous vortex of disparities has facilitated the poor outcomes seen in Blacks with COVID-19.

The observations of disparate outcomes during the COVID-19 crisis harken back to the aftermath of Hurricane Katrina. On the eve of Hurricane Katrina, the mayor of New Orleans ordered a mandatory evacuation, but 40% of the people in New Orleans—a predominantly African American city—did not own cars. Minorities were three times less likely than Whites to have access to a vehicle and were less likely to evacuate. These same individuals were at a disadvantage for rescue, response, and recovery as they lived in the lowest lying regions in New Orleans.[6] The most damaged areas of New Orleans were disproportionately Black (46%) and below the poverty line (21%) compared with undamaged areas (26% and 15%, respectively).[6] Inhabitants of these neighbourhoods either drowned from the flood waters or were left to perish for days, unattended by federal help. Approximately 1500 people died from the flood, primarily Black and poor, and it is estimated that hundreds more died from the downstream sequelae.[7] Under-recognized is the fact that the Lower Ninth Ward, a predominantly Black community, had been similarly devastated by Hurricane Betsy in 1965, and that history had repeated itself.

Downstream sequelae such as those seen with Katrina can be expected with COVID-19. The impact of resource diversion from non-communicable diseases to COVID-19 care, the complications of COVID illness itself, and the psychological and economic toll of the crisis will probably manifest as a sustained surge in chronic illnesses long after the immediate morbidity and mortality of

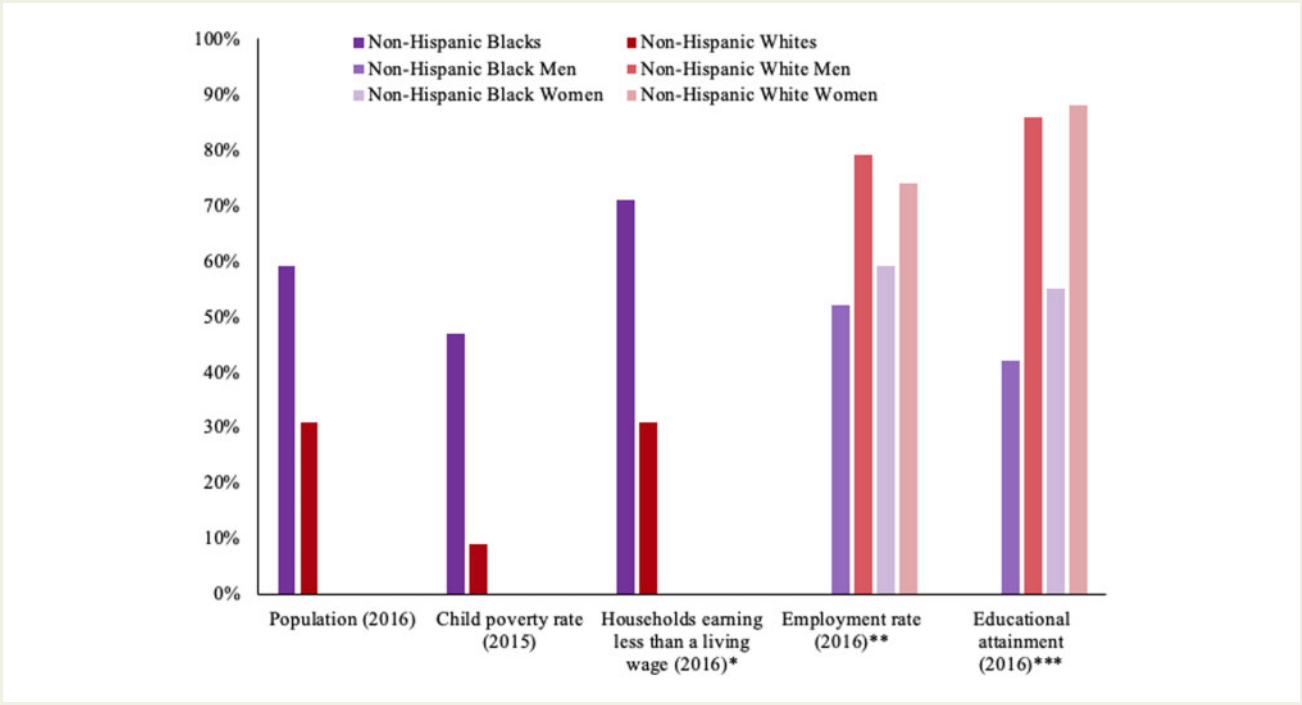

Figure 3 Racial inequities in the social determinants of health, Orleans Parish, Louisiana. Data from The Data Center, New Orleans, LA, USA.[15] *Annual living wage for 1 adult 1 child in New Orleans is US$47 611. These data represent households earning <US$45 000. **Percentage of the population aged 16–64. ***Percentage of the population 25 years and older with at least some college education.

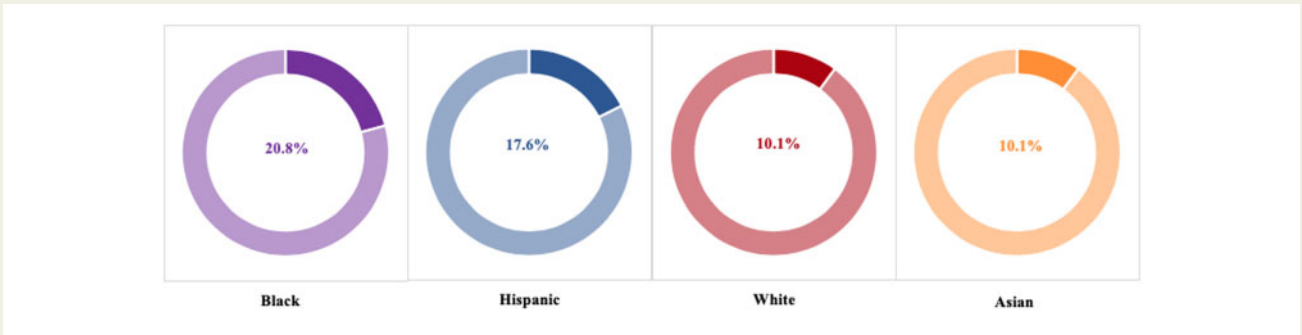

Figure 4 Poverty by race in the USA, according to 2018 United States Census Data.[16]

COVID-19 abates. This burden will be likely to be borne disproportionately by Blacks.

What lessons can be learned from both Katrina and COVID-19?

Our history of healthcare disparities needs to change. We have known for decades that health and healthcare are not distributed equitably. The Heckler Report[8] from 1985 documented long-standing disparities in cardiovascular disease and mortality, much of which have yet to be addressed. Given the disconnect between healthcare expenditure and life expectancy in the USA—ranked first globally in per capita expenditure but 32nd in life span[9]—it can be argued that it is not what is spent but how it is spent.

COVID-19 and the predecessor crisis, Hurricane Katrina, force us to once again revisit the recalcitrant disparities and the burden felt in under-represented minority communities. These disparities are real, painful, exact disproportionate suffering on vulnerable populations, and are not limited to the USA.

How will a civil society respond to this galvanizing call?

There should be a comprehensive manifesto. First, health equity[10] must be given primacy as we re-visit the apportionment of community investments after COVID-19. Secondly, our constructs of healthcare must broaden from treating disease to maintaining a culture of health via urban planning, safe housing, elimination of food deserts, and public health initiatives in schools and communities.[11,12] Thirdly, there must be economic development and cross-sector partnerships in low-income neighbourhoods to effectuate lasting change.

The resolve needed will be substantial, the investments will be significant, and the commitment will need to be sustained. We do not seek a 'new normal' as a return to our pre-COVID-19 state perpetuates these same disparities. Rather we aspire for a better normal, one where the social determinants of health have been fully addressed and health equity is our new undeniable goal.

The next crisis will come. Let us plan for a better outcome.

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References

References are available as supplementary material at *European Heart Journal* online.

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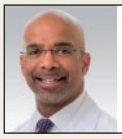

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